

[illegible]

A system and method are disclosed to acquire high temporal resolution free-breathing cardiac MR images. The technique includes monitoring heart rate of a patient just prior to image acquisition to acquire a time period of an R-R interval, and using this time period from the heart rate monitoring to prospectively estimate future R-R intervals. The acquisition of MR data can then commence at any point in an R-R interval and extend for the time period recorded. The data acquisition can be segmented and acquired in successive R-R intervals, then combined to create high temporal resolution images.

[illegible]